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Claim 18 (Currently Amended): A method of manufacturing semiconductor device comprising a semiconductor substrate and a MOSFET provided on the semiconductor substrate, the MOSFET including a source region formed in the semiconductor substrate, a drain region formed in the semiconductor substrate, a channel region formed between the source region and the drain region in the semiconductor substrate, a gate insulating film and a gate electrode formed on the gate insulating film, said method comprising:

forming the gate insulating film having a first dielectric constant, on the semiconductor substrate; and

forming a region in edges of the gate insulating film to have a second dielectric constant lower than the first dielectric constant.

Claim 19 (Original): The method according to claim 18, comprising:

forming as the gate insulating film having the first dielectric constant a Hf silicate film;

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etching the Hf silicate film to a prescribed thickness by using a hard mask, except a part which lies beneath the hard mask; and

forming the region having the second dielectric constant in the edges of the gate insulating film by introducing silicon, via those parts of the Hf silicate film which are exposed by etching, via parts of the Hf silicate film which lies on edges of the gate insulating film.

Claim 20 (Original): The method according to claim 19, wherein silicon is introduced into said parts of the Hf silicate film, by exposing said part of the Hf silicate film to silicon radicals at a temperature of at least 400°C.

Claim 21 (Original): The method according to claim 18, comprising:

forming a HfO_2 film as the gate insulating film having the first dielectric constant;

etching the HfO_2 film to a prescribed thickness by using a hard mask, except a part which lies beneath the hard mask; and

forming a region having the second dielectric constant in the edges of the gate insulating film, by introducing aluminum, via those parts of the Hf silicate film which are exposed by etching, into parts of the Hf silicate film which lies on edges of the gate insulating film.

Claim 22 (Original): The method according to claim 21, wherein aluminum is introduced into said parts of the Hf silicate film, by exposing the said part of the Hf silicate film to aluminum radicals at a temperature of at least 400°C.